

Amendments to the Claims

1. (original) A method of analysing results from an electromagnetic survey of an area that is thought or known to contain a subterranean hydrocarbon reservoir, comprising:

providing vertical electric dipole (VED) response data obtained by at least one VED detector detecting a signal from a horizontal electric dipole (HED) transmitter;

providing background data specific to the area being surveyed; and

comparing the VED response data with the background data to obtain difference data sensitive to the presence of a subterranean hydrocarbon reservoir.

2. (original) A method of analysing results from an electromagnetic survey according to claim 1, wherein the background data are obtained from a controlled source electromagnetic survey.

3. (original) A method of analysing results from an electromagnetic survey according to claim 1, wherein the background data are obtained from a magneto-telluric electromagnetic survey.

4. (original) A method of analysing results from an electromagnetic survey according to claim 1, wherein the background data are further VED response data obtained from another electromagnetic survey of the area performed at a different time.

5. (original) A method of analysing results from an electromagnetic survey according to claim 1, wherein the background data are calculated from a rock formation model.

6. (original) A method of analysing results from an electromagnetic survey according to claim 5, wherein the rock formation model is derived from a combination of geological data and resistivity data.

7. (original) A method of analysing results from an electromagnetic survey according to claim 6, wherein the geological data are from seismological surveying.

8. (previously presented) A method of analysing results from an electromagnetic survey according to claim 6, wherein the resistivity data are from well logging.

9. (previously presented) A method of analysing results from an electromagnetic survey according to claim 1, wherein difference data are obtained as a function of position within the area and are sensitive to boundaries of the subterranean hydrocarbon reservoir.

10. (currently amended) A computer program product ~~bearing~~ comprising a machine readable medium bearing machine-executable instructions for implementing a method of analysing results from an electromagnetic survey according to claim 1.

11. (currently amended) A computer apparatus loaded with machine ~~readable~~ executable instructions for implementing the method of analysing results from an electromagnetic survey according to claim 1.

12. (original) An electromagnetic survey method applied to an area that is thought or known to contain a subterranean hydrocarbon reservoir, the area comprising subterranean strata beneath a seafloor, the method comprising:

deploying at or above the seafloor a horizontal electric dipole (HED) transmitter and at least one receiver, the receiver including a vertical electric dipole (VED) detector; and

collecting from the at least one VED detector VED response data induced by the HED transmitter.

13. (original) An electromagnetic survey method according to claim 12, wherein the receiver comprises a single vertically aligned antenna.

14. (original) An electromagnetic survey method according to claim 12, wherein the receiver comprises a vertically aligned antenna and two horizontally aligned antennae extending in different horizontal directions.

15. (previously presented) An electromagnetic survey method according to claim 12, further comprising:
providing background data specific to the area being surveyed; and
comparing the VED response data with the background data to obtain difference data sensitive to the presence of a subterranean hydrocarbon reservoir.

16. (original) A method of planning an electromagnetic survey of an area that is thought or known to contain a subterranean hydrocarbon reservoir, comprising:
creating a model of the area to be surveyed including a rock formation containing a postulated hydrocarbon reservoir, and a body of water above the rock formation;
setting values for water depth, depth of the postulated hydrocarbon reservoir, and resistivity structure of the rock formation; and
performing a simulation of an electromagnetic survey in the model of the survey area by calculating vertical electric dipole (VED) response data obtained by at least one simulated VED detector detecting a signal from a simulated horizontal electric dipole (HED) transmitter; and
adjusting the model to remove the postulated hydrocarbon reservoir and repeating the simulation to obtain background data for comparison with the VED response data.

17. (original) A method of planning an electromagnetic survey according to claim 16, the method further comprising:
repeating the simulation for a number of transmitter-receiver horizontal separations and frequencies of transmitter signal in order to select optimum surveying conditions in terms of transmitter-receiver horizontal separations and frequencies for probing the hydrocarbon reservoir.

18. (currently amended) A computer program product ~~bearing~~ comprising a machine readable medium bearing machine-executable implementing the method of planning an electromagnetic survey according to claim 16.

19. (currently amended) A computer apparatus loaded with machine ~~readable~~ executable instructions for implementing the method of planning an electromagnetic survey according to claim 16.

20. (new) A method for obtaining hydrocarbon from an area that contains a subterranean hydrocarbon reservoir, comprising:

providing vertical electric dipole (VED) response data obtained by at least one VED detector detecting a signal from a horizontal electric dipole (HED) transmitter during an electromagnetic survey of the area;

providing background data specific to the area being surveyed;

comparing the VED response data with the background data to obtain difference data sensitive to the presence of the subterranean hydrocarbon reservoir;

identifying the subterranean hydrocarbon reservoir using the difference data; and

penetrating the subterranean hydrocarbon reservoir with a hydro-carbon producing well.

21. (new) A volume of hydrocarbon obtained from an area that contains a subterranean hydrocarbon reservoir, the hydrocarbon obtained by:

providing vertical electric dipole (VED) response data obtained by at least one VED detector detecting a signal from a horizontal electric dipole (HED) transmitter during an electromagnetic survey of the area;

providing background data specific to the area being surveyed;

comparing the VED response data with the background data to obtain difference data sensitive to the presence of the subterranean hydrocarbon reservoir;

identifying the subterranean hydrocarbon reservoir using the difference data;

penetrating the subterranean hydrocarbon reservoir with a hydrocarbon-producing well; and

extracting the volume of hydrocarbon from the reservoir using the well.

22. (new) A results data set representing an area that is thought or is known to contain a subterranean hydrocarbon reservoir, the results data set obtained by:
deploying at or above the seafloor a horizontal electric dipole (HED) transmitter and at least one receiver, the receiver including a vertical electric dipole (VED) detector;
collecting from the at least one VED detector VED response data induced by the HED transmitter; and
generating the results data set based on the VED response data.

23. (new) A computer readable storage medium having a results data set according to claim 22 recorded thereon.

24. (new) A method for obtaining hydrocarbon from an area that contains a subterranean hydrocarbon reservoir, comprising:
extracting hydrocarbon from the subterranean hydrocarbon reservoir, the subterranean hydrocarbon reservoir having been determined to contain hydrocarbon by means of an electromagnetic survey method comprising the steps of:
providing vertical electric dipole (VED) response data obtained by at least one VED detector detecting a signal from a horizontal electric dipole (HED) transmitter during an electromagnetic survey of the area;
providing background data specific to the area being surveyed;
comparing the VED response data with the background data to obtain difference data sensitive to the presence of the subterranean hydrocarbon reservoir; and
identifying the subterranean hydrocarbon reservoir using the difference data.

25. (new) A method according to claim 24, wherein the extracting step includes penetrating the subterranean hydrocarbon reservoir with a hydrocarbon-producing well.